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REMARKS

The allowance of claims 13-16 is noted.

Claims 1-20 remain in the application.

Claims 1 and 10 are amended to more particularly point out and distinctly claim applicant's invention.

Claims 2 and 11 are amended to place the claims in independent form as further explained hereinafter.

Claims 8, 9, and 12 are amended to provide proper antecedents.

Claim 17 is amended to correct a typographical error regarding the dependency.

Allowable Subject Matter:

The Office Action states that claims 2-8, 11, 12, 19, and 20 were objected to as being depend on a rejected base claim but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

By this amendment, claim 2 is amended to include the limitations of prior base claim 1. It is believed that this amendment to claim 2 places claim 2 in condition for allowance by incorporating the limitations of base claim 1 as stated in the Office Action.

By this amendment, claim 11 is amended to include the limitations of prior base claim 10. It is believed that this amendment to claim 11 places claim 11 in condition for allowance by incorporating the limitations of base claim 10 as stated in the Office Action.

35 USC 103 Rejection of Claims 1 and 9:

Claims 1 and 9 were rejected under 35 U.S.C. 103 over U.S. patent no. 6,265,939 issued to Wan et al in view of U.S. patent no. 6,710,716 issued to Abe et al. This rejection is respectfully traversed.

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Amended claim 1 includes, among other things, a first gain stage ... having a first current source coupled to form a first bias current having a first maximum value wherein a maximum value of the first detection current is limited to the first maximum value, and a second gain stage including a second current source for supplying a second bias current having a second maximum value wherein the second detection current is limited to the second maximum value when the high frequency signal is greater than the predefined amplitude, and wherein the second maximum value is greater than the first maximum value. The combined relied on references do not teach or suggest using two separate current sources that have bias currents that set a maximum value of the of the respective first and second detection currents and where the second maximum value is greater than the first maximum value.

Wan et al allow the diodes to continue contributing to the value of the output voltage after the diode becomes non-linear (see column 3, lines 25-35). As indicated in the Office Action, Abe et al are used for teaching the use of a gain stage instead of a diode. Combining Abe et al with Wan et al does not make-up for the deficiencies of Wan et al. Accordingly, it is respectfully submitted that the combined relied on references do not make obvious claim 1.

Claim 9 now depends from allowable claim 2 and is believed allowable for at least the same reasons as claim 2.

Claims 3-8 also depend from allowable claim 2 and are believed allowable for at least the same reasons as claim 2

Claims 10 and 18:

Although claims 10 and 18 were not included in the statement of the rejection of claims 1 and 9, it appears

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that the Office Action intended to include claims 10 and 18 in the rejection of claims 1 and 9.

Amended claim 10 includes, among other features, gain stages that include current sources for establishing maximum current levels in the gain stages ... and wherein each gain stage has a different maximum current level, wherein the gain stages function with transfer functions that convert the high frequency signal to detection currents for summing at a common node. At least these elements of amended claim 10 are not taught or suggested by the relied on references. Wan et al do not teach or suggest using current sources to establish a maximum current level for each gain stage nor does Wan et al teach or suggest using a different maximum value of current for each gain stage. Abe et al also do not teach or suggest these limitations of amended claim 10. Accordingly, the combined relied on references are deficient in making obvious amended claim 10.

Claim 12 depends from allowable claim 11 and is believed allowable for at least the same reasons as claim 11.

Claim 18 includes, among other things, a current source for providing a bias current, a first transistor ... having a first width and a first conduction electrode coupled to a node for producing a portion of the bias current as a first detection current, and a second transistor operating in response to the high frequency signal, ... having a first conduction electrode coupled to the node for producing a second detection current for summing with the first detection current to produce an output signal.

At least these limitations are not taught or suggested by the combined relied on references. Both Wan et al and Abe et al are deficient in teaching using a first transistor that has a first conduction electrode coupled to a node for producing the first detection current and using a second transistor that has a second conduction electrode coupled to the node for producing the second detection current.

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Accordingly, the combined relied on references can not make obvious amended claim 18.

Claims 19 and 20 depend from claim 17 and are believed to be allowable for at least the same reasons as claim 17. Additionally, the Office Action stated that claims 19 and 20 would be allowable if re-written. IT is believed that the allow ability of claims 19 and 20 if re-written is still valid.

The references cited but not relied upon were reviewed and are believed not to make obvious applicants' invention.

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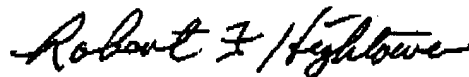
CONCLUSION

Applicant(s) made an earnest attempt to place this case in condition for allowance. In view of all of the above, it is believed that the claims are allowable, and that the case is now in condition for allowance, which action is earnestly solicited.

Although it is believed that no fees are due for this amendment, the Commissioner is hereby authorized to charge any fees may be required or credit any overpayment to Deposit Account 50-1086.

If there are matters which can be discussed by telephone to further the prosecution of this Application, the Examiner is invited to call the undersigned attorney/agent at the Examiner's convenience.

Respectfully submitted,
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